

IN THE CLAIMS

1. (currently amended) A method for equalizing the pressures in a melting ~~the melting~~ chamber and in the cooling water system for an ingot mold/induction coil circuit of a special melting unit, ~~for example a pressure electroslag remelting (PESR) unit having a copper ingot mold, or a pressure induction furnace having an induction coil and a cooling water system,~~ comprising:

comparing a in which the pressure of ~~the~~ cooling water ~~for the ingot mold/induction coil circuit to a~~ is compared to the pressure of the process gas in a ~~in the~~ melting chamber of the unit, wherein a ~~characterized in that~~ the pressure difference is maintained in a range from 0 to  $\pm 0.5$   $\pm 0.5$  bar;

feeding a process bar, whereby the gas from the melting chamber of the unit is first into ~~led to~~ an intermediate vessel containing hydraulic liquid, and only then supplying said ~~is the~~ hydraulic liquid ~~supplied~~ to one of the two chambers of a piston-type accumulator, whereby, corresponding to a pressure drop or pressure rise in one of the process gas or cooling water ~~two~~ media, counteraction is provided by adjusting at least one of the pressure of the process ~~discharging excess gas or the flow of by additional repumping of cooling water, or vice versa,~~ and determining the direction of the countereffect for a pressure drop or pressure rise is ~~determined~~ by the magnitude and rate of one of a the pressure drops or a pressure drop/pressure rise to equalize the pressures in the melting chamber and in the cooling system.

2. (currently amended) A device for equalizing the pressures in the melting chamber and in the cooling water system of a special melting unit comprising: ~~unit, for example a pressure electroslag remelting (PESR) unit having a copper ingot mold, or a pressure induction furnace having an induction coil and a cooling water system, in which~~

a cooling water circuit;

a piston-type accumulator which is subdivided by a piston into a first and a second ~~two~~ variable-volume chamber in said ~~chambers is provided in the~~ cooling water circuit for an ~~the~~ copper ingot mold/induction coil, wherein the first ~~the one~~ chamber of said ~~the~~ piston-type accumulator is connected ~~being connected~~ via a pipe and control fittings to the said cooling water circuit for the ingot mold/induction coil, to coil, ~~and~~ a heat exchanger; ~~exchanger,~~ one or more circulating pumps; ~~pumps,~~ and an additional high pressure water refill pump being correspondingly provided in the said cooling water circuit, wherein said second ~~characterized in~~ ~~that the other~~ chamber of the piston-type accumulator is connected via an additional pipe and a control fitting ~~and control fittings~~ to an intermediate vessel which is partially filled with a hydraulic liquid, wherein said ~~the~~ intermediate vessel is ~~being~~ connected via an additional hydraulic line having ~~with~~ control and shutoff fittings to the melting chamber, and at least one ~~chamber of the PESR unit or of the pressure induction furnace, and one or more pressure sensor~~ ~~sensors being~~ respectively mounted in each of said pipes ~~the above referenced pipes,~~ whereby, corresponding to the design pressure of the unit, the piston-type accumulator is ~~accumulator~~ ~~may be designed as~~ a hydraulic cylinder with a continuous piston rod or as a pneumatic cylinder with a magnetic piston, and the high pressure water refill pump is ~~pump may be designed as~~ a metering pump.

3. (currently amended) The device according to Claim 2, wherein the pipe between the vessel and the furnace hood above the liquid-filled chamber of the vessel leads into this vessel, and the piston-type accumulator is situated in a plane below the plane of the vessel.

4. (currently amended) A device according to Claim 2, wherein the piston rod of the piston-type accumulator extends through both end walls of the piston-type accumulator, and

cooperates with position switches by which the valves in the pipes which are connected to the vessel can be actuated.

5. (previously presented) A device according to Claim 2, wherein the piston rod of the piston-type accumulator extends through both end walls of the piston-type accumulator, and cooperates with position switches by which the valves in the pipes which are connected to the vessel can be actuated.